Strain was measured using arc weldable vibrating wire (VW) strain gages manufactured by Geokon Inc. like the one shown in figure 5.1. The gages were installed in tension-compression pairs on the flanges of the sheet piles, as shown in figure 5.2, at regular intervals of length. The mounts were welded using a gauging block and blank. After the mounts cooled, the gage was inserted into the mounts and set at the appropriate amount of pre-strain by stretching or compression before locking with set screws. The "plucker" which causes the wire to vibrate, and measures the frequency, was slipped over the gage and secured with a hose clamp. When all of the gages and pluckers were attached to the pile, the gages were covered with steel angle to protect them from damage during pile driving. The strain was recorded using a pair of Campbell Scientific CR1000 dataloggers.

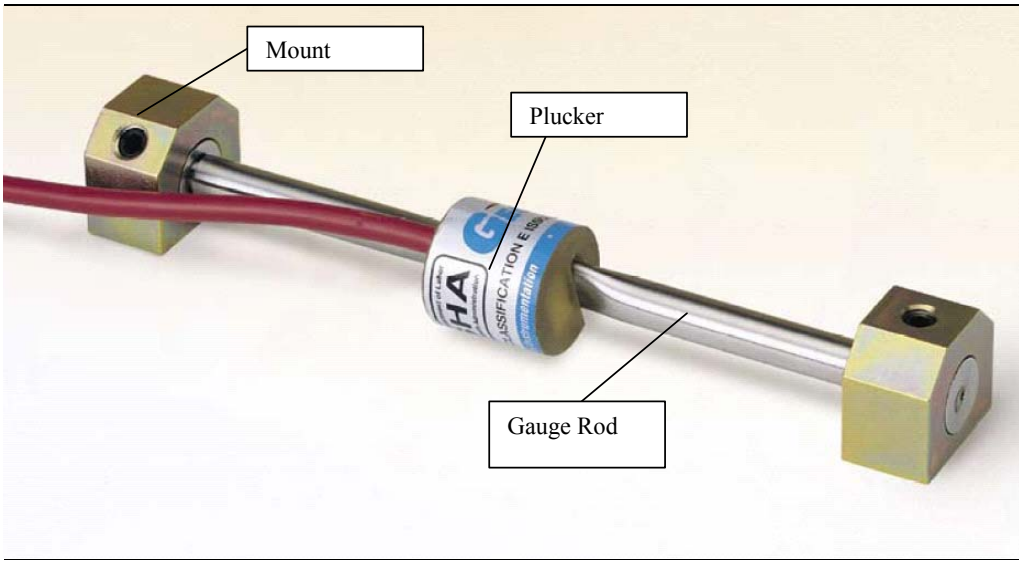

Figure 5.1 - Geokon model 4000 strain gage